

## **CLAIMS**

What is claimed is:

- 5 1. In an automotive type cooling system containing a used coolant fluid and having an engine engaged with one of a radiator and an expansion tank for mutual fluid exchange through an upper hose from an upper radiator port to an upper engine port and a lower hose from a lower engine port to a lower radiator port, the method of replacing the used coolant fluid in the system with a new coolant fluid comprising the steps of:  
10 interconnecting a fill port of one of the radiator and the expansion tank with one of the external tanks using a tank hose; disconnecting the upper hose from the upper radiator port; interconnecting the upper hose to the other of the external tanks; sealing the system so that fluids within the system are constrained for movement only within and between the engine, at least one of the radiator and the expansion tank, and external tanks through  
15 the upper hose, lower hose, tank hose and extensions thereof; creating a pressure differential in the system to drive the used coolant fluid from the engine and radiator into one of the external tanks while replacing the used coolant fluid with the new coolant fluid from the other of the external tanks.
2. The method of claim 1 wherein the step of creating a pressure differential in the system  
20 comprises drawing a vacuum in the one of the external tanks.
3. The method of claim 1 wherein the step of creating a pressure differential in the system comprises operating an internal coolant fluid pump.
4. The method of claim 1 wherein the step of creating a pressure differential in the system comprises operating an external coolant fluid pump.
- 25 5. The method of claim 1 further comprising the preliminary steps of drawing a partial vacuum in the automotive system and then sucking an engine cleaning fluid into the automotive system through the radiator fill port; and circulating the engine cleaning fluid through the automotive system until the engine is estimated to be clean.

6. The method of claim 1 further comprising the post step of drawing a partial vacuum in the automotive system and then sucking an engine conditioner into the automotive system through the radiator fill port.
7. In an automotive system containing a used fluid and having an engine engaged with a radiator for mutual fluid exchange through an upper hose from one of an upper radiator port to an upper engine port and a lower hose from a lower engine port to a lower radiator port, an apparatus for replacing fluid in the automotive system comprises: one of a radiator fill port and an expansion tank fill port interconnected with a one of two external tanks using a tank hose; the upper hose from the upper engine port interconnected with a second one of the external tanks; a means for creating a pressure differential in the system; the system sealed so that the fluid within the system is constrained for movement only within and between the engine, at least one of the radiator and the expansion tank through the upper hose, lower hose, and tank hose when the pressure differential creating means is applied in such manner that the used fluid is forced into one of the external tanks, while the new fluid moves into the engine and the radiator.
8. The apparatus of claim 7 wherein the pressure differential creating means is a vacuum in one of the external tanks.
9. The apparatus of claim 7 wherein the pressure differential creating means is an internal pump within the engine.
10. The apparatus of claim 7 wherein the pressure differential creating means is an external pump outside the engine.